REMARKS/ARGUMENTS

The claims are 11-18. Claims 16 and 18 have been amended to better define the invention. Support may be found, *inter alia*, in the disclosure at page 4, first full paragraph. Reconsideration is expressly requested.

Claims 12-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Nakata et al. U.S. Patent No. 5,719,758* in view of *Kuranuki et al. U.S. Patent No. 6,452,816*. The remaining claim 11 was rejected under 35 U.S.C. 103(a) as being unpatentable over *Nakata et al.* and *Kuranuki et al.* and further in view of *Yang U.S. Patent No. 6,597,159*.

The Examiner disregarded the arguments regarding variations of the energy of the D.C. supply voltage or solar module presented in Applicants' July 24, 2008 Amendment because these features were said not to be recited in the claims. In addition, in the Examiner's view, the dead time in *Kuranuki et al.* is not set as a function of power, but rather as a function of the detected current of the D.C. voltage source, and that FIG. 6 of

Kuranuki et al. shows how the dead time is a function of the detected current of the D.C. voltage source by detecting the return current of the D.C. voltage source.

In the Examiner's view, *Nakata et al.* discloses a known topology with the claimed features as a solar inverter, transformer, rectifier and chopper feeding the A.C. grid, and that *Kuranuki et al.* teaches the remaining claim limitations such as continuously detecting the current of the D.C. voltage source and setting the dead time as a function of the detected current. The Examiner has also not given patentable weight to the recitation solar inverter because this recitation occurs in the preamble rather than in specific process steps or structural limitations contained in the body of the claim. In the Examiner's view, a solar module has not been claimed and even had a solar module been claimed, the Examiner took the position that the combination of *Nakata et al.* and *Kuranuki et al.* would operate as intended because the dead time would be increased for light current regardless of whether the light current was due to a light load or a low source.

In response, Applicants have amended claims 16 and 18 to better define the invention and respectfully traverse the Examiner's rejection for the following reasons.

In principle, the use of a so-called dead time for reduction of the switching losses of switching elements according to the phase shift procedure is known; however, this dead time always is a fixed value. For most applications, where the D.C. voltage source always delivers a more or less constant input voltage, such a fixed dead time is acceptable for a good level of efficiency. If the input voltage of the D.C. voltage source, especially for a solar module is not constant, a fixed dead time would result in a good level of efficiency only for certain input voltages or certain degrees of solar radiation. Variations of the energy of the D.C. voltage source or solar module, respectively, necessarily result in a reduction of the efficiency of the inverter which can be avoided by Applicants' solar inverter and method as recited in claims 16 and 18 as amended, where the dead time of the switching elements for switching over from one switching element to a further switching element

connected in series of the bridge inverter is set as a function of the detected current of the D.C. voltage source.

To further specify the dead time, claims 16 and 18 have been amended to recite "thereby ensuring that parasitic capacities stored in the switching elements of the bridge inverter can be completely recharged and no excessively long switching pauses can occur at the same time." By adapting the switching times of the switching elements it is ensured that these results occur.

None of the cited references discloses or suggests a solar inverter or method in which the dead time is controlled as a function of the detector current of the D.C. voltage source as recited in Applicants' claims 16 and 18 as amended. As the Examiner has recognized, this feature is not disclosed in the primary reference to *Nakata et al.* Although the Examiner has taken the position that this feature is disclosed in FIG. 6 of *Kuranuki et al.*, it is respectfully submitted that the Examiner's position is unfounded. As discussed at column 25 of *Kuranuki et al.*, FIG. 6 simply shows the region of the dead time satisfying the ZVS condition for various values of the time average of the load current in the switching power supply of Example 1. It is

respectfully submitted that each of these dead times is set at specific values for specific periods and not set as a function of the detector current of the D.C. voltage source.

Similarly, with respect to the remaining reference to *Yang*, the dead time is always set as a fixed value. There is no disclosure or suggestion of a controlling the value of the dead time as a function of the detector current of the D.C. voltage source as recited in Applicants' claims 16 and 18 as amended.

Accordingly, it is respectfully submitted that claims 16 and 18 as amended, together with claims 17 and 11-15 which depend respectively thereon, are patentable over the cited references.

In summary, claims 16 and 18 have been amended. In view of the foregoing, it is respectfully requested that the claims be allowed and that this application be passed to issue.

Respectfully submitted,
Andreas LUGER, ET AL.

COLLARD & ROE, P.C.
1077 Northern Boulevard
Roslyn, New York 11576
(516) 365-9802

Frederick J. Dorchak, Reg. No.29,298
Attorneys for Applicants

FJD:cmm

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